46th Year DECEMBER 6, 1906 Number 49

AMERICAN BEE JOURNAL

APIARY OF H. S. LITTLE, OF NEWBURY, MASS.

APIARY OF ELLIS S STENABAUGH, OF FLEMINGTON, N. J.

(See page 994)

TWENTY-PAGE NUMBER

American Bee Journal

THE AMERICAN BEE JOURNAL

PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY

334 Dearborn Street, Chicago, Ill.

IMPORTANT NOTICES.

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States, Canada, and Mexico; all other countries in the Postal Union, 50 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec06" on your label shows that it is paid to the end of December, 1906.

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Reading Notices, 25 cents, count line, subject to the above discounts.
Goes to press Monday morning.

National Bee-Keepers' Association

Objects of the Association.

1st.—To promote the interests of its members.
2d.—To protect and defend its members in their lawful rights.
3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

☞ If more convenient, Dues may be sent to the publishers of the American Bee Journal.

Bee-Keepers' Souvenir Postal-Card.—We have secured a somewhat comic Souvenir Postal Card for bee-keepers, printed in 4 colors—red, yellow, blue and black. At the left end the following are pictured: An old-fashioned straw bee-hive with bees circling around and above it; a sad-eyed bear with his "hands" over his sweet-loving heart; a jar and a section of honey; also a spoon with a card attached, reading, "Come let us spoon awhile." At the bottom of the card, and to the right, are these words: "Eat thou honey because it is good."—Prov. 24:13. At the left of the bear's head, and encircled with bees, is this sentence: "I can not BEAR to lose you;" and at the top, and to the right of the bear's head and bees, is this stanza:

O won't you BEE my HONEY,
And cheer this lonely heart?
For I would hug you all the time,
And we would never part.

PRICES, postpaid: 3 cards for 10 cents (stamps or silver), or FREE with the American Bee Journal one year at $1.00; 10 for 25 cents; or 25 for 50 cents. There is a blank space on the card about 2 by 2½ inches in size for writing. Send all orders to the office of the American Bee Journal.

"The continuous advertiser gets the bulk of the business, because others are not advertising, and he is."

American Bee Journal

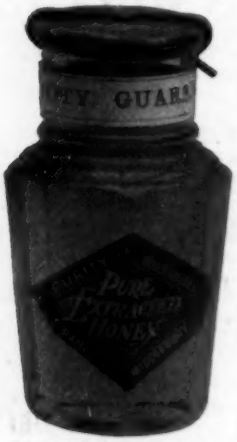
Some Styles of Honey-Jars

Now is the time to make ready for Thanksgiving and Christmas trade. Honey at this time of year always sells best. Put up your Extracted Honey in one of the attractive Jars illustrated on this page, label it nicely, and you will be surprised at the ease you can sell it and the prices obtainable.

½-lb. Tumblers

HALF-POUND TUMBLERS

There seems to be an increasing demand for a cheap tumbler to put up a half-pound of honey to retail at 10 cents. We have secured a stock of such tumblers at a price which enables us to offer them at $5.00 per barrel of 32 dozen This is less than 1½c apiece. For less than barrel lots we cannot repack them for less than 25c a dozen; or we will put them up 4 dozen to the case with partitions ready to re-ship when filled, at $1 a case; 10-case lots at 95c.



Tip-Top Jars.

TIP-TOP HONEY-JARS

This is a new-style jar sealed with rubber ring under rim of a glass top held securely with spring-top fastener. This fastener is applied to a great variety of bottles and jars used for different purposes. We have selected two styles among them all as being the most suitable for honey. The one and two pound square jars may be had with spring top fastening instead of cork at 75c per gross extra. We can furnish in two sizes.

½-pound, 45c per doz.; gross, $4.50. 1-pound, 50c per doz.; gross, $5.

HERSHISER JARS

These jars were designed for use in the honey exhibit at the Pan-American Exposition in Buffalo, and are very neat and attractive. They have cork-lined aluminum caps which seal them tight. They are made in 4 sizes square and 3 sizes round. Write us for complete prices on this style of jars.

NO. 25 JARS

The illustration to the side does not do justice to this jar. It must be seen to be fully appreciated. We have sold this jar for years and in larger quantities than any other. It is really our standard, and the demand for it is unfailing. Packed in re-shipping cases of 2 dozen each. We are now prepared to offer No. 25 jars in partitioned cases of 2 dozen each, ready to re-ship, when filled, at $1 per case; 10-case lots or over, 95c; 50-case lots at 90c.

MASON FRUIT-JARS

These are very largely used for canning fruit, and are often used for honey as well. As we buy them by the car-load, we can make the following prices at Medina, all put up complete with porcelain-lined caps and rubbers, in cases of one dozen:

Size.	*Doz.*	*6 doz.*	*12 doz.*
Pint	$0.52	$3.00	$5.75
Quart	0.55	3.10	6 00
½-gal.	0.75	4.10	8.00

Triumph Wrench for Mason Caps, 15c each; by mail, 20c. Ball's Waxed Rings, better than rubbers, 5c dozen; postage, 3c.

LABELS

Don't fail to label your bottles and cans of honey. A good label is a profitable advertising instrument. Don't make the mistake of using a poor label. We are properly equipped to turn out the best work in the shortest time at lowest prices. Write for our label catalog, showing 50 styles. We can make special labels for large orders.

Hershiser Jar.

No. 25 Jar.

Write Nearest Branch or Agent for Catalog.

Alabama
*Wetumpka ..... J. M. Jenkins

Canada
Toronto ..... E. Grainger & Co.

California
*Fresno ..... Madary Planing Mill
*Los Angeles ..... California National Honey Producers' Association

Colorado
Denver ..... The L. A. Watkins Mdse. Co.
Fruita ..... Fruita Fruit and Produce Ass'n

District of Columbia
Washington ..... The A. I. Root Co.

Georgia
Savannah ..... Howkins & Rush
124 Liberty St.

Illinois
Chicago ..... The A. I. Root Co.
144 East Erie Street.

Indiana
Indianapolis ..... Walter S. Pouder
Evansville ..... Vickery Bros.

Iowa
Des Moines ..... Joseph Nysewander

Kansas
Augusta ..... Carl F. Buck

Mississippi
Brazelia ..... George A. Hummer

Massachusetts
Boston ..... H. H. Jepson. 182 Friend Street
Lyonsville ..... W. W. Cary & Son

Maine
Mechanic Falls ..... The A. I. Root Co.

Maryland
Baltimore ..... Rawlins Implement Co.

Michigan
Bell Branch ..... M. H. Hunt & Son
Fremont ..... George E. Hilton

Minnesota
St. Paul ..... The A. I. Root Co.
1024 Mississippi Street.

Missouri
High Hill ..... Juo Nebel & Son Supply Co.
Springfield ..... Springfield Seed Co.
St. Louis ..... Blanke & Hauk

New Mexico
Carlsbad ..... Edward Scoggin

New York
Syracuse ..... The A. I. Root Co.
New York City ..... The A. I. Root Co.
44 Vesey Street.

Ohio
Columbus Grove ..... McAdams Seed Co.
Toledo ..... Griggs Bros., 521 Monroe St.
Zanesville ..... E. W. Pierce
Cincinnati ..... C. H. W. Weber
2146 Central Avenue

Oregon
Portland ..... Portland Seed Co.

Pennsylvania
Du Bois ..... Prothero & Arnold
Philadelphia ..... The A. I. Root Co.
10 Vine Street
Williamsport ..... E. E. Pressler
633 Lycoming Street

Texas
Dallas ..... Texas Seed and Floral Co.
San Antonio ..... Udo Toepperwein
Uvalde ..... D. M. Edwards

Utah
Ogden ..... The Superior Honey Co.

Virginia
Spottswood ..... W. E. Tribbett

* These dealers buy our goods in carload lots but supplement them with local-made goods.

THE A. I. ROOT CO., Medina, Ohio

(Entered at the Post-Office at Chicago as Second-Class Mail-Matter.)

Published Weekly at $1.00 a Year, by George W. York & Co., 334 Dearborn Street.

GEORGE W. YORK, Editor | CHICAGO, ILL., DECEMBER 6, 1906 | Vol. XLVI—No. 49

Wanted—A Good, Effective Hive

The following letter has been received and read with much interest:

AMERICAN BEE JOURNAL—

Gentlemen:—Your invitation to subscribe is at hand, and I take no bee-journal, although I am not unacquainted with yours. It is as good as any, I guess.

But until some of the bee-papers can furnish the public with a good, effective bee-hive, or a pattern thereof, or instructions how to make such, that an ordinary man of ordinary sense, can make out of pine lumber with hand-saw and hatchet that is superior to the old box-hive, bee-journals are useless. Who ever furnishes it, his fortune is made.

Garland Co., Ark. E. A. FULFORD.

The American Bee Journal desires above all things to be useful, and there is a plainly implied reproach that so far it has remained "useless," and all because it has not furnished instruction for making a hive "with hand-saw and hatchet that is superior to the old box-hive."

As our correspondent is not unacquainted with this Journal, he can hardly have failed to note that it has made an earnest effort to supply all desired information regarding apicultural matters, even to the extent of having a regular department each week, in which each subscriber has the privilege of answers to any questions he may send in. The only reason for the neglect to give the instruction desired by our correspondent, is that no one has heretofore asked for it, and so it was not known that any one wanted it. Now that the want is known, the reproach for the omission shall no longer continue.

Get pine boards 1 inch thick. For the sides of the hive, cut 2 pieces, each 20¼ inches long and 10 inches wide. For the ends, 2 pieces 15 inches long and 9⅜ inches wide. Nail together so that the outside measure of the hive shall be 20¼x17. The pieces for the sides and ends are not of the same width, and are to match at the bottom. That leaves an open space ⅝ inch at the top at each end. To close this space, and also to furnish cleats by which to lift the hive, nail on each outside end a piece 17x1⅝ inches.

For a cover, take a board 18 inches long and 17 inches wide, having a cleat nailed on each end. Such wide lumber is now expensive, and the cover may be made of 2 or more narrower pieces, covered with ruberoid roofing, which is now to be had at the lumber yards.

A bottom-board may be 2 or 3 inches longer than the hive, and of the same width, or the hive may be placed on any flat surface. In either case there should be nailed upon the floor at each side, and also at the back end, strips 1 inch wide and ½ inch thick.

Ten frames are needed. For these, rip out of your inch lumber strips ⅜ inch thick. Cut the top-bar 20 inches long, the bottom-bar 17⅝, and the end-bars 8⅜. Nail the top-bar and bottom-bar on the end-bars, making a frame 17⅝x9⅛, outside measure, this being the size of the Langstroth frame.

This will not be so good as a factory-made hive, but it will be a long ways ahead of a box-hive, as it allows each comb to be taken out instead of being a sealed book like the box-hive. Whether our fortune is made hereby remains to be seen.

Capacity of British Standard Frame

D. M. Macdonald says in the British Bee Journal:

Editor York (page 553) states that the Langstroth frames are 35 percent larger than our standard. I, after allowing for thicker wood and taking internal space (the true test), work it out at rather under 25 percent. Our hives, with 10 or 11 frames, have practically the same breeding space as an 8-frame Langstroth.

Quite right, Scotch friend; the proper way to make comparison is by inside measurement.

Anchoring Hives

To secure hives from being blown over in exposed situations, the Irish Bee Journal gives the following:

Pass a rope over the roof with two bricks at one end and secured at the other end by a strong stake driven into the ground beside the hive.

The Pampered Drone

Referring to the Hasty-Miller controversy about the drone, page 813, Editor Digges, of the Irish Bee Journal, says Mr. Hasty's views are common enough, but he thinks them groundless, and quotes from the "Irish Bee Guide" the following flowery passage:

"Here may be observed wise Nature's regulation that gives the battle to the strong, and to the brave the fair. The agile lover; he whose self-restraint has dipped with temperate appetite into the honey vats, and whose quick power of flight, not lessened by emasculating idleness, is trained and strengthened by sufficient exercise, is first to reach the queen, and, in brief ecstasy of that embrace, gives all his vigor to the making of a hardy race; and giving all, he dies."

Again Irish Requeening of Colonies

On page 685, comment was made upon an article in the Irish Bee Journal, written by T. Maguire. To this a reply was made by the editor of that journal, as mentioned on page 929. Now comes the following letter from Mr. Maguire himself:

EDITOR AMERICAN BEE JOURNAL:—A copy of your paper of Aug. 9, in which you comment on my little article on "Requeening," in the June issue of the Irish Bee Journal, has been sent me by the editor of that paper.

He refers to your comment in the October number of his paper, and gives some authorities in support of my statement that you ask for. Almost every prominent writer on bees that I have read insists on the importance of having young queens, and I think it is now "up to you" to quote those who enlarge upon the virtues of old ones.

Why, in this very issue of your paper, Morley Pettit refers to the subject in similar terms to mine. He says (page 689): ".....

American Bee Journal

when she comes to the following spring to be marked '2 years,' she may do well, *or she may not*." (Exactly what I said.) "I believe the wisest plan is to replace her *as soon as possible*," etc. A wiser plan still, perhaps, would have been to replace her the previous "fall" (as you term it), when young queens were more easily obtained than in spring.

As to your remarks on swarming, and in the old smothering system, you seem to have quite missed the point of my argument. Under that barbarous smothering system, to which I referred, the "top" or first swarm (containing, of course, the old queen) was smothered at the end of the harvest. Only the old skep (containing a young queen), and perhaps a "side" swarm or two, were retained. Each apiary, therefore, contained generally nothing but queens of the "previous year's rearing," when spring came around. Your remarks, consequently, on swarming not changing the age of a queen have no bearing, seeing that the old queens were dispatched every season.

In this country apiaries are small, and apiarists only learning modern methods. Perhaps over 80 percent of the bee-keepers here have not more than 4 colonies. The climate is damp, the summer short, the honey-flow precarious. These facts make bee-keeping somewhat different from what it is in America; but even in that land of huge apiaries, hot summers, and enormous tracts of honey-pasturage, I doubt whether it would not pay better to work generally with queens "of the previous year's rearing," as advocated by nearly all our experienced men.

Bee-keepers here are like brothers. I feel, therefore, glad of an excuse for exchanging remarks with one in far away Chicago—where some of my schoolmates are.

I wish you, and all the fraternity, much prosperity. Yours faithfully,

T. MAGUIRE.

Enniskillen, Ireland, Oct. 16.

We are very glad to get this letter, Mr. Maguire, and for several reasons. One reason is because of the fine quality of good-nature with which it abounds. Another is because it discloses a misunderstanding on your part that is not so much to be wondered at, but which, when cleared up, will put things in a different light. You say:

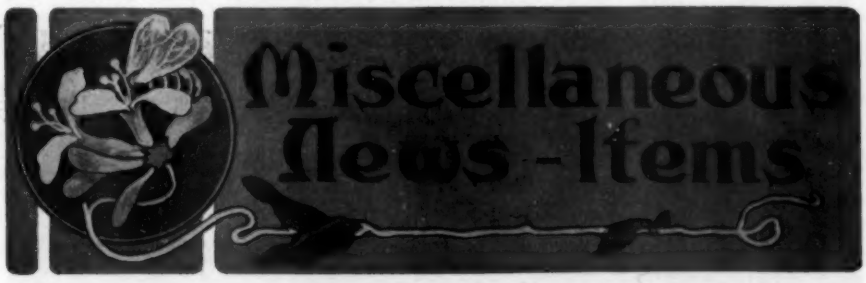
"Almost every prominent writer on bees that I have read insists on the importance of having young queens, and I think it is now 'up to you' to quote those who enlarge upon the virtues of old ones."

We are more likely to come to an understanding if your attention is called to the fact that the relative value of old and young queens was not a matter of dispute between us. Please look again at page 685, and you will see that we did not say a word as to whether you were right or wrong in thinking young queens better. We did not dispute your view that it was better to replace queens at the end of their first year. What we did question was your statement that "the matter is strongly urged in bee-guides and bee-journals."

As to the authorities quoted in the Irish Bee Journal, it can easily be now understood how both you and Editor Digges counted them as supporting your position, for you evidently had in mind the question as to the inferior value of queens too old, and each one of the authorities quoted most certainly argued their inferiority. But with a single exception they most emphatically did not urge that a queen should be replaced at the end of her first year. Replacing a queen at the end of her *second* year is a different thing from replacing her at the end of her *first* year. Referring to the remarks of Mr. Pettit, page 689, from which we quote, it will be seen that he says that as a rule a queen goes through her *second* season and does well, and that she may do well the *third* season, or she may not. Can that by any possibility be construed into urging that she be replaced at the end of her first year? When you look again at page 685, and see just exactly what we were talking about, there will surely be no further disagreement between us.

Yes, you are quite right that the point of your argument as to removing old queens by the brimstone method was missed. In this country the rule has been to "take up" the heaviest and the lightest colonies; the heaviest because giving the most honey, and the lightest because they would not be likely to go through the winter, and what honey they had might as well be taken. By this plan the doomed queens might be young or they might be old. In your country, it seems, the first swarm is always the victim, and that would always doom the old queen. You might ask whether in dooming the heaviest colonies in this country we did not always doom the first swarm, and to this question we can make no positive reply.

It was good of you to send what you call the "little sketch" as an antidote in a case of "bad humor," but you may rest assured there was no "bad humor" in the case. If there had been, the reading of that sketch, which will appear in a future number, would certainly have been an effective cure, for the one who can read it through without a hearty laugh must be farther gone in bad humor than is ever allowed "in this locality."



Dzierzon is Dead! — An extra leaf in Praktisher Wegweiser has the following announcement:

LOWKOWITZ (Upper Silesia in Austria), Oct. 26, 1906.—This forenoon, after long confinement to a sick bed, departed this life the revered old bee-master, Dr. John Dzierzon, aged 95 years and 9 months.

The condition of the deceased became so much worse in the past few days that his departure was hourly expected.

PEACE TO HIS ASHES!

Dr. Kuehl and wife have gone to Lowkowitz, in the name of the German, Austrian, and Hungarian *Wanderversammlung* to lay a wreath on the coffin of him who has fallen asleep.

We hope soon to give a biographical sketch of this Prince and Father of German bee-keepers.

Mr. P. R. Hobble, of Dodge City, Kan., called on us last week. He is nearly 70 years old, and from 17 colonies, spring count, he secured about a ton of comb honey, and increased his apiary to 30 colonies.

The Apiary of Ellis S. Stenabaugh, shown on the front page, was written about by Mr. S. as follows, on Aug. 22:

I have kept bees for the last 20 years, but until about 12 years ago I knew but very little about them. About that time I was employed by a man who had 40 or 50 colonies. I helped him in his apiary, and with all his bee-work, in fact, and so contracted the fever. So after helping him 8 years I bought his stock, which, with my own, made 56 colonies, and I moved them to their present location about April 1, 1901. When I looked through them on May 1 of the following year, I wished they were where they had come from, as I found only 27 that I considered at all good. Some were queenless, and several had foul brood, but that year I obtained 2000 pounds of honey (comb and extracted), and that is a very good yield for this locality.

The winter of 1903-04 was very cold, and in the spring of 1904 there were but 14 colonies alive. I always let them swarm once, and try to cut queen-cells, but that summer they went ahead of me, increasing to 34 colonies, besides obtaining 1200 pounds of honey.

The spring of 1905 I had 29 colonies, which increased to 68, and produced about 2000 pounds of honey.

Last spring I sold a part of my stock, and at present have 69 colonies; but it is a very poor year for honey, and they are doing scarcely anything.

I have a little foul brood, but in the fall I always "take up" any that show any signs of the disease.

The photograph shows, besides myself, my 10-year-old son Charles, who hived a swarm alone when I was away one day.

ELLIS S. STENABAUGH.

The Apiary of H. S. Little is shown on the first page this week. He wrote as follows concerning it, Sept. 29:

I am an amateur bee-keeper, as I started July, 1905, with one colony. I wintered 4 colonies—3 in box-hives, which proved worthless and were transferred. I have at present 11 colonies in my "Brook View Apiary." The bees are mostly hybrids, but I have 4 pure Italian queens and expect to rear enough queens next spring to introduce to the hybrid colonies.

The hives are the 8-frame factory-made kind, and I use 4¼x1½ inch plain sections, as my customers think they are plumper and nicer than the bee-way sections.

I expect to winter the bees on the summer stands with a chaff super, as they have a sheltered location.

I exhibited my honey at the Agricultural Fair, and took the prize.

I read 3 bee-papers and have a text-book, and all have paid me more than they cost.

H. S. LITTLE.

In Old San Antonio.—Last week we tried to tell something of the trip from Chicago to San Antonio in the special car-load of bee-keepers. On the way some one asked us

American Bee Journal

if the Texas bee-keepers expected to meet the delegation from the North. We replied, "Sure! They'll have a Mexican brass band at the railroad station, and receive us all in regular Fourth of July style."

But when our car pulled into San Antonio everything was as quiet as a cemetery at midnight, and there wasn't a sign of a Southern bee-keeper to be seen anywhere. We had supposed that they knew a lot of us Northerners were coming, but it looked as if they "done forgot" all about it. We learned afterward, however, that they thought we were coming in at another station than where we arrived, and so they missed us.

The Grand Central Hotel is only about two blocks from the International & Great Northern station, so it was easily found. At first the hotel accommodations and meals were anything but satisfactory, but we learned from the proprietress that she had just passed through a deep affliction in the recent loss of a son, who had been sick for 5 weeks. It was a new hotel, and she had not been able to get it properly furnished and in running order before the bee-keepers swooped down on her. When she saw her unpreparedness, a week or so before the convention date, she felt like declining to try to entertain the bee-keepers; but, then, she thought, it would not be right to break her agreement and leave the bee-keepers adrift, so she did the best she could with the unfavorable circumstances under which she labored. However, in a day or two after the bee-keepers arrived, things began to improve around the hotel, so that it was a pleasant place to stop.

Shortly after arriving at the hotel, at about 11 a.m. on Nov. 8, the Southern bee-keepers began to appear and greet their Northern visitors and others. There was the hustling Toepperwein, who had made all the arrangements for the convention; Louis H. Scholl and wife, the former well known to our readers; O. P. Hyde and charming daughter; J. E. Chambers, who, with his interesting helpers, were pictured in these columns lately; W. O. Victor, President of the Texas Association; C. C. Parsons and son, late of Alabama, but now of Florida; W. H. Laws, the queen-breeder, and little daughter; E. J. and Will Atchley, the latter also accompanied by his wife. And many others soon appeared to meet and greet the rapidly arriving bee-keepers, who began to hum around and "buzz each other" somewhat in imitation of their little friends at home—the bees.

The afternoon of Nov. 8 was spent by many of the visitors at the International Fair, then being held in San Antonio. This is a great event for that part of the country. And the exhibits were really numberless and most excellent. Of course, what interested us most was the large and very fine apiarian exhibit made by Mr. Toepperwein and others. It was really a magnificent display. We had hoped to have some pictures of it, but so far have failed to get them.

At about 7 o'clock in the evening the bee-keepers began to gather in the large Market Hall for the first session of the convention, the proceedings of which will soon be issued in full in pamphlet form, and then afterward we expect to publish them in the American Bee Journal.

We had hoped to tell this week of the "warm" Mexican supper that was given the bee-keepers, but have not room to do so. But next week we will try to describe it, if possible, and if our pencil does not melt and paper burn when attempting to write down the "hot stuff" that went down over a hundred throats that memorable evening.

"Do It Now."

Here's a motto for us all:
"Do it now."
Should the work be great or small,
"Do it now."
Time is money you can't borrow,
So to banish much of sorrow
Don't put off until to-morrow—
"Do it now."

—*Selected.*

T-Super the Great Comb-Honey Super

BY DR. C. C. MILLER.

Some bee-keepers are quietly using the T-super in preference to all others, and because they say little or nothing about it their number is probably a good deal larger than generally supposed. One of them is Mr. Frank H. Drexel of Colorado, who has sent me a letter of such general interest that by his permission I herewith give it to the public:

LETTER FROM MR. DREXEL.

DEAR DR. MILLER:—Somewhere back in the 90's I asked you some questions about T-supers, and you remarked, after having answered them, that you hoped I would tell about how I liked T-supers and why I used them in preference to other kinds.

Now, I fairly itched at times to say what I thought about the advantages of T-supers, and to give vent to my indignation at the manner in which the supply-manufacturers have been forcing out of use such a good thing. Indeed, only recently, when Mr. Greiner let loose his batteries against the much-abused T-super, I just felt as if I had a call to rush into print, if I should be given space, and defend the super of my choice to the best of my ability.

But whenever I thought the matter over calmly, I always came to the conclusion that it wasn't worth while. I would say to myself: "What's the use?" And I say the same thing to you now.

You have answered nearly all, if not all, the objections that have been advanced against this particular form of super. You have made it plain to those who wish to see, that the super has merits to stand on, and that it would be in use to a large extent today, if certain interests had not decided against it. All the various points you made, which would hold equally good in case of other fixtures as well, regarding the influence of journals and of catalogs carefully worded, on the minds of beginners, are simply too manifestly correct to be gainsaid.

I haven't the desire to pester any one with my ideas in connection with any particular fixture or system, and I am convinced that no one cares greatly what I am using, or how I use it, unless it would mean dollars to them to know. As I never considered the use of T-supers worth many dollars per year, as compared with the use of any other good super to which one has become accustomed, I have simply held my peace.

But to you I will say that I am getting rid of all my section-holder supers as fast as I can, and I have only about 100 left.

Editors and business managers may sing the praises of section-holders until they grow weary of it—but it is all lost on me. I have tried them on a more or less extensive scale, and they are not as good, to my way of thinking, as are the T-supers.

If section-holders did not shrink; *if* they did not warp; *if* the end-bars always remained rigid; *if* they did not require cleaning; and *if* they were as easily filled in spring and emptied in the fall as they are represented to be—then I believe they would be nearly as good as T-tins.

You know, section-holders cost more than T-tins, and they do not last as long. They frequently fail to be accurate the second year of their life. The cleaning of a section-holder is a small job. But the cleaning of 6,000 is a job to be dreaded. I don't know how much longer it takes to clean 6,000 section-holders than it takes to clean 3,000 T-tins, but I do know that the person trying the experiment would never be in doubt as to which he would prefer to do in the future.

Of course, I know that some bee-men do not take any stock in such arguments, for they do not clean section-holders. They clean supers. All right! I have no quarrel with them. The only difference between that class and myself is that they slap-bang! and I do not, and do not want to.

The diamond-shaped section usually comes to me out of the section-holder super. According to the picture of a section-holder this should be impossible. According to Editor Root, I have things mixed concerning this. But I guess that *you* know that diamond-shaped sections are not the fault of the T-super—but of poorly-made ones. Whereas a section-holder may be made ever so good, in time and by careless handling it can turn out sections so beautifully diamond-shaped that they will hardly stand being squared, however warm and soft they may be. This happens very frequently through hurry. The end-bars should stand perpendicular, and the bottom-bar should be spaced equally distant from both sides of the super. Some are made so that they simply have to be that way, but they do not remain so.

Our T-tins on the other hand, do not warp, nor shrink, nor twist. They may be made to bend. Especially if one is given to slap-bang work, but I have no trouble of that kind.

There is so little to get out of order in a T-super that I admire your choice,

American Bee Journal

Doctor, and I am glad that I followed you.

You and I and other users of T-supers know that we have a good thing, but we may as well keep silent about it, so far as making any impression on dealers is concerned, for they do not wish to know about T-supers. As for me, I am convinced that they do not favor the idea of spreading the light of the T-super, either—let the motives be what they may—or you would not have witnessed the change in the way this super has been treated in the annual catalogs. From a *beautiful cut* far removed from the regular goods, with wording to suit, the only thing remaining to justify the claim that it has not been dropped, is the mention that customers may have their choice of Dovetailed, T, etc., at the same price.

There, now, Doctor, *you* have my ideas on the subject, although I have by no means said everything there is to be said in favor of the T-super. One should work with both kinds on a fairly large scale to be able to draw proper conclusions. The T-super has its faults, to-wit: That sections can not readily be moved about if that should become necessary; a T-super does not work nearly as well over a box-hive as does a section-holder super, for the slats are a distinct protection in that case. When carelessly handled, the T-super has a way of dumping sections, tins and all, in a heap. But after having girls and boys, men and women, to help me for 12 years, I have had about a half-dozen supers act in that way, and only *one* that I can remember which was filled with honey.

The T-super makes it necessary to use little strips of wood or tin between the sections on top to fill the spaces made by the T-tins below. This is fussy work, and really isn't pleasant. Don't you think so, Doctor? But you will agree with me, no doubt, that the work of putting those strips in is not nearly so great as some people would like to make it out to be. Some people can not put together section-holder supers without making a great deal of fuss about it, and so it is with T-supers. Every move necessary is magnified until one would suppose that it took 10 precious minutes to load one T-super. How much can you beat that, Doctor?

Now I am not extra swift, but by actual time, I have put top and bottom starters in 24 sections, set them into the T-super, put in separators and follower and springs, keyed them all up solid, and inserted the strips, in 6 minutes. I don't know that I can keep that up all day, but I will gamble that I can do them by the hundred in 8 minutes. If the section-holder super admits of more rapid manipulation than this, the difference will probably be due to the strips.

There are those who throw sections into supers regardless of regularity, some with dovetails up and some with dovetails down. The separators stick up here and stick down there, and the end-bars lean this way and that, leaving gaps and cracks all over. But I do not urge the T-super on such people. If one is going to call that sort of work "good enough," better for him to keep shy of the T super, which, although simplicity iself, requires just a little care in packing. Don't you think so?

I have written you a much longer letter than I had any idea of doing when I began, but it is so easy to do that when one is really in earnest.

Before closing, I wish to tell you that I have often wondered how you perform the operation of slipping the T-tin under the row of sections when you are loading a super. I used to just put down the 3 tins and put the sections between them, which gets to be easy enough after you practice it a while; but, lately, I kept thinking about this slipping-under scheme which you have so frequently referred to, and so I tried an idea which works well. I wonder if it is the same thing that you have been practicing:

On a flat board the same size of the super, I nail three little strips nearly as long as the inside width of the super. These strips are spaced so that they will come within 1-4 inch of the staples when the super is placed squarely on the board. This, when putting in a row of sections, will have the effect of raising them just high enough on the side where the T-tin belongs to slip it easily under the 6 sections without having to touch them at all with the hand. When all the sections and tins are in, raise the super, and all drop into place, and the whole thing is done. Very simple, only I hadn't thought of it before. I never could understand how you raised 6 sections so as to slip the tin under as quickly and easily as you said you could.

If you have a better way, I would thank you for the information.

Of course, I am not expecting a personal reply—but a line under questions and answers in the American Bee Journal will suffice.

FRANK H. DREXEL.

Replying to the question as to the little strips used to fill in the spaces between the tops of sections, there is no doubt about its being fussy work, even when one has become used to it, requring no little strength of fingers. At first I did not use these strips, but while I produced crops that brought top prices, there was a chance for some of the sections to be a little out of square, and the bees did not fail to fill with glue the spaces. So I prefer the fussing with the little sticks with the perfect squareness of all the sections.

I think you are a little hard on the manufacturers, Mr. Drexel, for I hardly see what interest they could have in sinking the T-super, and yet I must confess it is a mystery to me why they have done so. May it not be that they are themselves deceived as to real values? When so intelligent and honest a man as Mr. F. Greiner can be so deceived—looking at it from your standpoint and mine—as to pronounce the T-super the worst ever, what can you expect of manufacturers?

You ask how much less than 10 minutes it takes me to load a T-super. I have just come from the shop, where I had my assistant fill up a super while I stood by with watch in hand. When the minute and second hand came to the right place, I called "Go." She placed the first row of sections, put the T-tin under, then the 3 other rows, put in the separators, fussed the little sticks in place on top, put in the follower, then wedged it up with the super-spring, all ready to put on the hive, and when she called "Done," just 1 minute 30 seconds had elapsed.

That doesn't answer your question squarely, for you asked how long it would take *me*. I don't know; that's Miss Wilson's work always, and she is no doubt an expert at it. I didn't try it, for I shall no doubt feel just as comfortable not to know how much longer it would take me. From the way her hands flew, I think she did her best. But it is only fair to say that in actual practice there is a chance for a little saving of time over the foregoing, for she never makes a separate job of filling the supers. As fast as she puts the foundation in a section, she places the section in the super, and it takes just a little less time to put the section in the super than it would to set it loosely on a board.

After I had written the foregoing I noticed that you had timed yourself, and included also the work of putting in the starters. So back we went to the shop, and she did the whole of the work, putting in top and bottom-starters, and getting the super ready to put on the hive. That took her 4 minutes 17 seconds. Very likely she could keep that up all day, for although she hurried you will readily understand that she would not make as rapid work in foundation after not having touched such work for several months as she would after "getting her hand in." I wonder whether such work as putting in foundation is not better suited to a woman's fingers than a man's, anyway?

I'm not sure whether I agree with you that slam-bang people will do better with some other super, but possibly you are right. In any case, I should hardly urge slam-bang people to produce section honey—or perhaps any other kind.

Your arrangement for filling sections in super is practically the same as the super-filler in use here, described in "Forty Years Among the Bees," on page 148, illustrated on page 189, and given to the public years before the book was published.

I notice that in filling a super you mention putting in the little top sticks the last thing. If you do the work in that order, I'm pretty sure you'll gain time by putting them in before the follower. Harder to squeeze them in after everything is snug.

After reading Mr. Drexel's letter, it occurred to me that some might ask, "How competent is the witness? for it makes a difference whether he is a beginner with 3 colonies that he has run with T-supers, or has had a hundred of them for several years." So I sent him a card, and received the following reply, after which I submit the case to the jury:

SECOND LETTER FROM MR. DREXEL.

DEAR DR. MILLER:—I have your card acknowledging receipt of my letter, and I am indeed glad to know that it has

American Bee Journal

done you good. Had I thought that you would wish to have it published, I might have added a few more reasons why I like the T-super. I know that *you* did not need to be told the good points, and no doubt you know more of them than I do.

But it seems to me that if this matter is again mentioned in the journals, and any notice of it taken, it will be looked upon as just another case of "old fogy" siding in with another "old fogy." However, do as you think best.

Now, to answer your question, I shall take up a little more of your time than is really necessary, but I want to tell you a few things as I go along, which will bring out a good point of the T-super.

When I first thought of taking up apiculture, some 13 or 14 years ago, I read up on the subject a little before buying any supplies, and it was then that I decided to use the T-super. The reason was this: Mr. Root said, in "A B C of Bee-Culture," that Dr. Miller was a good man to follow. So I followed. Of course I made mental comparisons as to the virtues of the different styles of supers, and I believe that I liked the T-super idea best; but after all, I feel quite sure that had I seen the catalog only, and not the "A B C of Bee-Culture," then I would have decided upon the section-holder super.

My first 200 supers were made at a local mill, and were not very good in point of accuracy, which, in a T-super, is quite important. So, later on, when I bought some factory-made hives, I wanted to buy along with them new supers of the T variety. But not much! Section-holder supers were "regular" then as now, and unless I wished to order them direct from the factory as a "special order," I would have to take section-holder supers with my hives. See the point?

Now the local freight from the East to where I live is no small object, and so I finally decided to take what I could get from the agents here. And to make the matter still worse for me, the section-holders were of the new kind—for 1 1-2-inch no-bee-way sections. Well, I had now 160 of these new affairs, and, so far as the sections were concerned, I liked them very well. But I did not like the holders. So I tried the 1 1-2-inch sections in my T-supers, and they worked like a charm with separators made to suit. So I decided to get a lot of separators for my T-supers and plain sections. And right here is what I wish to call your attention to.

The T-super is the most flexible super I know of. Any width section will work in it and you need not have a barnful of section-holders of different widths on hand. When I say "a barnful," I exaggerate, of course, but it emphasizes what I really mean. Just take the section-holders out of 160 supers (8-frame) and see what an awful pile you've got.

After some time I found it did not pay me to continue using the plain sections, and I had to get rid of those section-holders as best I could, but my old T-supers were just as good for one kind as for another, and so I ordered several hundred more from the factory. These were good, and I have ordered more from time to time, until now I have 800 8-frame T-supers in use.

But I also found myself adding section-holder supers to my stock. Not because I wanted them, but because they were "regular." New hives with supers always meant the section-holder kind. Also, by buying up bees, I became the owner of still more of these supers, until I had 500 of them on hand. So, although I certainly cannot lay claim to being an extensive bee-keeper, as we understand it out here, still I think I am entitled to pass upon the merits of the two kinds of supers from actual experience.

This year I have had in use 800 T-supers and 300 section-holder supers, 200 of the latter being the 10-frame size. Each spring I find it necessary to go over these section-holders and either strengthen them with an additional nail or so, or by simply driving the old nails up. Mr. Gill says they are too light, as made by the factories. I think so, too.

But my T-tins need no fixing. All I've got can be cleaned easily in a day, and packed away in a couple of small boxes the size of 8-frame hives.

I am working with the two kinds of supers now, taking out the last of the most be-propolized sections I have ever seen, and, as for me, give me the T-supers—all things considered—all the time.

And, then, too, if there is any virtue in having sections come close down to the brood-nest, the T-super puts them there when others do not. The first honey comes off as clean and white in T-supers as in any other. Later on, I believe the section-holder protects the bottoms of sections more perfectly, but not enough to make it an object.

So there, then, I've answered your questions in a roundabout away, and hope you will pardon me for being long-winded.

As a "parting shot" at those who who claim there is no demand for T-supers, I will tell you that my friends around here much prefer my style of super to those they are obliged to take from the store; but hesitate to adopt them because of the expense in making the change, and the difficulty in getting new T-supers from time to time as they may want them. Anything is better than a mixture, and so they create no demand for T-supers. *Therefore,* "No one wants them but a few old fossils," say the manufacturers. And if not *old* fossils, then fossils anyway.

FRANK H. DREXEL.

P. S.—I have been operating about 600 colonies for 5 years, and ship honey in large quantities, and mostly out of 1-supers. That should be a fair test as to the kind of work they will do on a large scale. Crawford, Colo.

Home Trade for Honey, Etc.

BY GRANT STANLEY.

It will certainly pay well to put considerable thought and effort in the matter of building up a strictly home trade for our product. In fact, I am led to believe it is one of the most important questions with which the bee-keeper has to deal—the disposing of his surplus product at the highest price obtainable.

The shipping of honey to commission men for disposition is, in many cases, far from satisfactory. Such honey requires much better packing than when consigned to the local markets; the commission men must have their percentage for handling it; the freight on the shipment must be paid; the risk of breakage in transit and fluctuating markets all come up for consideration, and as can be expected all this extra expense is wrung from the pockets of the producer.

It is all wrong for a producer of a commodity to sell his product at a price scarcely above the cost of producing. If there is any one who should be well remunerated for his efforts it is the producer. The bee-keeper has invested his money in bees, hives and bee-appliances, and his success as a bee-keeper, and producer of a good, high-grade article, is the result of years of experience and study, and he is entitled to every dollar there is in it.

We should remember that the matter of quality is as important a feature with our home trade as when shipped to distant markets. If we are very careful to cater to the wants of the consumer, we will be able to dispose of immense quantities of honey at home. It is certainly a pleasant experience to have people within a radius of twenty or thirty miles call at your door and purchase honey; and if quality has been given the consideration it warrants, the sales will increase to such an extent that the demand will soon be far greater than the supply. By all means look into the matter of a strictly home trade.

Let us remember that attractiveness and neat appearance are placed in an article for the sole purpose of soliciting patronage, else why bother with it? While quality is the all essential the consumer seeks in the purchase of an article. Now we readily see that the producer places attractiveness in the article to assist in the sale, and the consumer, feeling assured the quality corresponds with the appearance, makes the purchase, as he has no use for attractiveness; so if we fail to place quality in the article we are guilty of deception and fraud. To make quality the first consideration in the production of an article, and offer it for sale in the most attractive manner possible, is the only way in which the highest results can be reached.

PREVENTING FOUL BROOD.

So much is being said about curing foul brood that it looks as if the matter of prevention is not given a single thought. Of course, when bees have contracted the disease there is nothing left to do but to apply a cure; but as "an ounce of prevention is worth a

American Bee Journal

pound of cure," why not turn some attention to the matter of preventing this disease? If it is not possible to destroy the underlying causes, would it not be a wise policy so to breed and protect our bees that they may in time become immune from it, the same as many diseases which man and cattle are heir to when under subjection? Preventive measures must be applied before any disease can be eradicated.

Nisbet, Pa.

Water for Bees—Other Subjects

BY A. J. COOK.

Every well-informed bee-keeper knows that bees need water. Has he not seen them at the watering-trough or at the brookside, thickly dotting the water's edge as they sip the refreshing liquid? Every wise bee-keeper will see to it that water is in close proximity to his apiary, and will so arrange that the bees may quaff to their fill, with no danger of loss of life. In case there is no natural supply, pans of water with chips placed in them or other provision for their safety, should be near the hives.

A good friend, commenting upon my articles recently, rather made light of my suggestion that the water was taken for the immediate use of the bees. Of course, I may be wrong, but I firmly believe that I was right.

Water Quickly Absorbed.

We have all noticed that we may eat a very full meal, and then drink a full glass of water with no essential disturbance. A very little more solid food or a glass of milk would bring no little uneasiness. This fact is easily explained. The water is almost at once absorbed from the stomach into the blood while the solid food or milk must first be digested, and then will be absorbed. Osmosis—the technical term for absorption—is always more rapid under pressure. We can see then, that with a full stomach we have just the conditions for very rapid absorption. We might reason from this fact of the rapid absorption of water, that it would take place in the case of the bee.

We have another proof of the rapidity of absorption in our own case when we drink at a time of great thirst. Of course, the thirst will not be quenched until the water reaches the blood, and yet, how quickly after we drink the refreshing beverage has the thirst entirely disappeared. We see the same thing in watering our horses. When they are very thirsty, if we let them drink to their fill, they will overdrink, often greatly to their hurt. If, on the other hand, we give them a pail of water and wait only a very few minutes, we find they drink no more; the water had passed to their blood and their thirst was satisfied.

In case of the bees, we have another reason for believing that this water is used at once. We never find it stored in the hive. True, it may be that the bees carry this to the hive and at once give it to the other bees, but in this case I suppose it is used at once by the nurse-bees and is never stored. Is it not probable, then, that the water is taken just as we take it when we are sure that we can get it whenever needed, only as the bees need it, and that as in our own case, it is at once absorbed and used?

It is well known that a goodly proportion of the body, even the most solid portion, is water, while in the blood and secretions, the water forms a much greater part. Circulation, of course, depends largely upon a good supply of water, but circulation is all important, if the body is to be kept in normal condition. We can understand, then, how water is so necessary a part of our food, and how health, no less than comfort, demands a sufficiency at all times. We can also understand why thirst is so terribly disturbing, and how the one, famished for want of water, suffers so terribly from the want. This should make us all the more careful that our bees and all our large domestic animals should have an ever-waiting supply of this life-giving aliment.

Bees and Fruit.

I am asked if I will give my reasons for thinking that bees never injure sound grapes. Although I have spoken so frequently through the American Bee Journal on this subject, I will briefly recapitulate my reasons for this opinion.

If we will watch and note that the bees are working in full force on the grapes or other fruit, and then select a cluster of grapes, remove all that are not perfectly sound, and hang the cluster where the bees may gain ready access to it, we will find that they leave the grapes entirely unmolested. If now we prick half of these grapes with a pin or needle, so that the juice exudes, and mark those punctured by tying a thread about the stem, we will find that while the bees will suck the pierced grapes entirely dry, they will leave all the others entirely unmolested.

We may even make a more crucial test. Shut the bees in the hive, ventilating them so they will not suffer, and take all food away from them. When their fasting has reached the danger limit, take a bunch of grapes, all of which are sound, and puncture and mark half of them as before. Now place this cluster in the hive, and we will find that only the punctured grapes will be sucked free of their juice. It is true that if wasp, bird or over-ripeness cause the juice to exude ever so little, then the bees will at once come to save the wasting liquid. I have observed that when the grapes get very ripe, this escape of juice is not uncommon, and it often explains how it is that the bees may come in full force, and seem to attack the grapes without provocation.

I would not say that bees could not puncture grapes and other fruit. I have seen them cut wood with their strong jaws in a way that makes it seem to me possible that they might, if they only knew, cut into sound fruit; but it is not their way of doing. They only seek out the nectar when it is exposed, so that the odor may attract them. I have no idea that the bees ever search out sweets except as exposure gives them hint of their presence.

Improvement of Bees.

Mr. J. H. Reed, of California, gave a very able address the other day before the Claremont Pomological Club. He said that, in Florida, their delicious fruit comes from improvement of seedlings. As we all know, seedlings are more vigorous than are the other varieties. They also bear much better. He suggested that it might be well to try to improve our seedlings rather than to depend entirely upon the improved varieties.

If this be true, then does it not give the bee-keeper a hint? May it not be better for him to improve the bees we have rather than to send away for improved breeds? We all know what Burbank has done in improving by selection various of our fruits and vegetables. Will not some future Burbank do as much toward improving our bees and other domestic animals?

Claremont, Calif.

T-Supers—Merits and Demerits

BY J. C. ARMSTRONG.

The merits and demerits of T-supers are up for discussion yet. Dr. Miller and I had a turn on it, and now F. Greiner comes in to compare the T-super with wide-frame supers, and rules the T-super out. I suppose Dr. Miller knows what Mr. Greiner's wide-frame supers are, and Mr. Greiner knows what the Doctor's T-supers are, and so they understand each other. But I don't know whether I know what the wide frames are or not; but if they are at all that I think they are, then save me from them. It has been so long since I had them that I don't know whether I can describe them or not.

If I recollect, the frames were the width of the sections and the length to hold 4, with standards at the ends (for the want of a better name) the width and height of the section. The sections were set in these and the bees glued them fast at the bottom and ends. I never put them on the hives but once, and they have long since gone to kindling-wood. If these are not his wide-frame supers, I don't know what he means.

The way he talks about T-Supers shows that he doesn't know anything about those I use. It is not my invention, but was invented by a practical bee-keeper. The very faults he finds in Dr. Miller's, mine are clear of. He first saw the T-super in Virginia, and after 2 years discarded it. I discarded my wide frames before the first year was out. He discarded them because of the pollen—it was impossible to remove the sections from them. For the same reason I discarded the wide frame.

He says a T-super might be constructed so as to remove difficulties by "keying up the sections on all four

American Bee Journal

sides." Mine are keyed up on but one side.

He says, "Sections do not fold squarely, and when placed in a super one corner will bob up, and there is no way of keeping them down." No way that he knows, of course. I have a way. "Springs on sides will not do it." I have no springs in mine.

"Wedges will not do it." I have no wedges for that purpose, either. "A screw, or rather 5 screws, might do it." I have no screws. "These naughty sections give me no trouble with my wide frame." Neither do mine.

"The most serious drawback to the T-super lies in the fact, that it must be handled very carefully before being placed on the hive, or it will tumble to pieces." I have no such trouble with mine. I put them together before I put them on the hive. Then I can take my arms full and drop them down any way, and they will not come apart.

"The sections have a way of catching on the tins at the bottom." That is what the tins are for. "The wooden strips between the tops of the sections require a world of patience to replace them when hurrying the work." I have no wooden strips to mine.

"Dr. Miller's bees have a naughty way of crowding in propolis between the top bars and tops of the sections, which fact can not be denied." I do deny it in mine, as I have T-tins at the top as well as as at the bottom.

So there you are.

I received a leter a few days ago from E. S. Armstrong, of Colorado. The correspondence between Dr. Miller and myself in the American Bee Journal stirred him up. He says he has greatly improved his T-super since I got mine from him (some 20 years ago). He still uses the T-tins top and bottom, and the button on the side. He is coming up this way this fall, when he gets rid of his honey, and he is going to bring both Dr. Miller and me a super, and if we don't say it is the best thing we ever saw, he will miss his guess. He expects to have about 700 cases of honey.

Marshall Co., Iowa.

Increase or Prevention of Increase—Which?

BY C. W. DAYTON.

Mr. Grant Stanley, on page 784, refers to my method of treating natural swarms. As Mr. Stanley seems to understand it, it would be a method for *increase* by hiving swarms. About 2 years ago there was a general call for a method for the *prevention* of increase. All the methods aim to prevent the issuance of swarms, unless we except the Alexander, and that, in reality, is a method of swarm control *by increase*. My method of hiving swarms, either singly or numerically, has never been given.

Some time ago, Mrs. Wilbur Frey, of Michigan, asked for a plan "to keep the apiary together without increase," or words to that effect. That is a very practical question at the present time, and these few words are suggestive of a great deal more than they imply. They suggest that the methods which have been masquerading under prominent headlines and glaring advertisements are lacking in practical utility. They invariably call for large expenditure for fixtures, or additional labor. One item of labor is the capture of queens out of very populous colonies. We may as well be a glass-blower as to be roasted in the open air.

"Increase," or the "breaking up" of the apiary, is one and the same thing. The cause of it all is swarms. Prevent swarms and you prevent both. Taking the working bees out from under surplus supers is not the consummation of it.

The above "talk" sounds considerably mixed, doesn't it, while I uphold a method that favors swarming? Well, it is because you have not distinguished that there is a difference between hiving a swarm in a new location, or in a new hive, and returning the bees to their old hive, but in a new or changed condition of mind. To swarm is to issue from the hive, but to permit any degree of increase is to intensify the former condition of mind. The change in their minds makes them desire the hives or conditions existent before they swarmed. About the time we begin to think the hives are about the right fullness to store and ripen honey to the best advantage, the bees take a notion into their minds that there are enough bees to establish another colony and farther replenishment of the earth. It is that part of the swarming act that is included in the law of creation. Not of mere instinct or environment. Yet, one could not prosper without the aid of the others.

There are three principal natural requirements for swarming, namely: An old queen (not necessarily a failing queen); a populous colony; and a good supply of honey in the flowers Of course, there are many other minor causes, but these come about by more or less mismanagement, and, therefore, are artificial. The only one of these three principal causes that can be removed is the queen. How to do this in the easiest and most satisfactory way is all that there is to be figured out. Let the swarms bring the queens out. Then pick the queen out by hand, or else drive the bees through a sheet of perforated zinc. Then the bees will be likely to decide that the queen has taken a pint of bees and "gone to the woods," leaving them behind. Then they will be satisfied to return to the old domicile and resume their former occupations The old hive is the only "ground" there is to work on, and the bees must be kept in it or there will be no means to work with. No amount of dodging will assist us over or under the magnitudinous obstacle. Off-hand guess-work counts in the wrong direction. The line of influencing particularities is long and varying. Few realize the fact that it is the surplus of bees in the hive that gets us our surplus of honey.

As for piling up the hive-bodies, one on top of another, supplied with empty combs or comb-foundation, to separate swarms, as described on page 784, I would say that the plan is what Mr. Getaz calls "tommy-rot," and Mr. Hasty, "dope." There are a good many persons who have kept bees for 25 years, and to the extent of 100 colonies or more, and still know very little about bees. They get vague ideas to accumulating in their heads, and that keeps everything else out. They do not want a bee-paper because its teachings run counter to their notions, and they do not believe what is in the journals because it does not agree with their vague ideas. Any swarm will stay in a box without combs, foundation or frames far sooner than with all these supplied. The main reason bees do not fight during a honey-flow is because they are scented with new honey, consequently they would be as one swarm in a short time. The honey scent does not deter them from sorting out the queens, however. They would prefer one of the queens—the most amiable or queenlike. I could not say exactly for what reason. The bees will ball and sting any other, and in three cases out of four not any of the queens would remain alive. Nearly all queen-breeders will tell you that when they put a dozen or more virgin queens in nursery or retention cages, and put them in a colony to be cared for by the bees, that the bees will cluster about one or two and neglect all the rest. The plain statement of this fact can be found on page 25 of Alley's Queen-Rearing, and in W. H. Law's article on Baby Nuclei, in the Bee-Keepers' Review in an early issue of 1905. What applies to virgins will apply in the case of fertilized queens in instances as above designated.

Since the above was written I saw Mr. Laws' statement on page 829, which corroborates my statement relative to fertilized queens. It is nearly a complete verification of my statement which Dr. Miller quoted in a "stray straw" in Gleanings for July 1, 1906, "that the size of the first swarm is varied a great deal by the amount of reverence the bees possess for the old queen." It also applies to swarms having virgin queens. I could not mention better authority on this question than Mr. Laws. With the correctness of that statement the rest of my assertion is nearly, if not quite, self-evident. I would not spend so much argument upon this matter, but in my opinion it contains the key to unlock the whole system of swarm management—changing swarming from a "bane" into an enjoyable and profitable operation. I have used the method for the past 10 or 12 years, and 2 years with 300 colonies, and with days when there were constantly from one to 3 swarms in the air. I was interrupted but little from other work of the apiary, because the bees do nearly all the labor that I used to do by hand manipulation in former managements.

As for bee-keepers in general, there is not one in ten that knows what a natural swarm is. Half of the swarms which issue, if put in a box with their queen, and no other inducement to cause them to stay, will leave the queen and return to the old hive. That shows where the bees ought to go and whe:

American Bee Journal

they will work best. It is as impossible to make a proper dispositioned swarm of every cluster of bees as to make an artificial kernel of corn that will sprout and grow.

Chatsworth, Calif.

The San Antonio Bee-Inspectors' Meeting

The meeting of bee-inspectors called at San Antonio, Tex., for November 12, 1906, by the committee consisting of N. E. France, W. Z. Hutchinson and Dr. E. F. Phillips, has come and gone. The attendance of about 50 persons represented the whole country. No one who attended thought the time ill spent. On the contrary, everyone there felt at the close of the afternoon session that it was a day most profitably passed; in fact, many expressed themselves that it was the best bee-meeting at which it had ever been their privilege to be present.

Dr. Phillips, of the Bureau of Entomology in the Department of Agriculture, Washington, D. C., called the meeting to order, and in his opening remarks gave the history of European foul brood in this country, and also gave a synopsis of the bee-disease work under consideration of the Bureau of Entomology. He then called upon Dr. G. F. White, of the Department of Agriculture, who gave an exhaustive description of the methods of working out disease germs. Beginning at the start he so carefully and fully explained his methods of work that everyone felt that he thoroughly understood every detail in the investigation.

Dr. White said in part, "If your cattle were being poisoned in the pasture and your neighbor's cattle were not, you would make a careful survey of your neighbor's farm and see what plants were growing in his pasture. Then you would make an examination of your own farm and would subtract the plants found in your neighbor's pasture from those found in yours, and those left in your own lot you would suspect as being the ones causing the poisoning. It is so with the investigation of a disease. A germ is a plant, and we study the flora of the healthy apiary and also of the diseased apiary and by this process of elimination and by the examination of a great many specimens we arrive at the cause of the disease."

The European foul brood is caused by *Bacillus alvei* described by Cheyne and published in 1885. The cause of American foul brood is found to be a germ hitherto undescribed, but called by Dr. White *Bacillus larvae*. To isolate this germ Dr. White used a medium the foundation of which was a bouillon made from the larvæ of the bees. No one else ever used this medium, and so no one else ever discovered the cause of American foul brood.

These germs are slender, rod-like bodies that grow in length and finally break into two individuals. This division occurs every 30 minutes, so that beginning with one, in one-half hour you will have 2, in one hour 4, in one and one-half hours 8, in two hours 16, two and one-half hours 32, three hours 64, three and one-half hours 128, and four hours 256 individuals. When the larva dies the germ goes into the spore or resting stage. It begins to thicken in the center or near one end and finally becomes a spherical body. This spore form is the resistant form and is the one which we have to fight in the field.

Dr. White then explained in detail the methods used in isolating one germ, and in making cultures for study. He also explained how the different media or soils were made and how one germ would show a certain character on one medium or soil, for the medium is to the germ what the soil is to the plant, while another germ would show an entirely different character. So by taking many different kinds of media and studying each organism on each medium it is possible to identify them.

Both American and European foul brood exist in Europe. These terms were given them because the European foul brood was worked out by Cheyne in Europe, and American foul brood was worked out in America.

Many samples of pickled brood have been examined, but no cause has been found for it. This is also true of bee-paralysis, and we are still in the dark as to the cause and treatment of these two diseases.

Dr. Phillips then gave a detailed description of American and European foul brood as it appears in the field. He stated that when Cheyne made his investigations he had, according to his own statement, but one specimen which was brought him by Cheshire. Since both diseases exist in Europe it is quite possible that the one specimen was what we now call European foul brood, especially since Cheyne describes the specimen as "watery." To the casual observer the diseases bear a similarity of appearance.

Dr. Phillips stated that at the present time European foul brood exists in New York, New Jersey, West Virginia, Connecticut, Massachusetts, Vermont, Pennsylvania, Ohio, Indiana, Illinois, and Michigan. The European foul brood is usually the more virulent of the two diseases, but on the other hand sometimes disappears of its own accord. He then gave the history of bee-disease investigations, and taking each investigator in turn, showed what was the probable cause which led him to arrive at his conclusions. It is interesting to note that the earliest theory was that a parasitic fly laid its eggs in the body of the diseased larvæ.

Dr. Phillips then announced three publications of the Bureau of Entomology: Technical Series, No. 14, "The Bacteria of the Apiary with Special Reference to Bee-Diseases," by Dr. G. F. White. Circular No. 79, "The Brood Diseases of Bees," by Dr. E. F. Phillips. And a reprint from Bulletin No. 61, Bureau of Entomology, entitled, "State and Territorial Laws Relative to Foul Brood."

Mr. N. E. France, the veteran bee-disease inspector of America, then read a paper on the History of Bee-Disease Inspection in Wisconsin. This paper was one of the gems of the meeting. Mr. France stated that many apiaries where foul brood once existed, after having been treated, were the means of paying off the mortgage on the farm, or of the building a new home for the owner. Other apiaries under different care, though once profitable, are now entirely wiped out or reduced to a few colonies.

Dr. Phillips read a paper from Mr. Charles Stewart, of New York, and also one from Mr. Fred A. Parker, of California. Both papers were valuable and interesting, and both clearly demonstrated the value of thorough and careful work on the part of the inspector.

Mr. J. M. Rankin, of the Bureau of Entomology, who is stationed at Chico, Calif., gave a short talk on the inspection on the Pacific Coast. He stated that he did not know of a case of European foul brood in California, but that the American foul brood was much more virulent there than in the East or North. Few inspectors in California now recommend the shaking treatment, as the time required to treat the disease is of more value than the bees destroyed. The method fast coming into favor is that of boiling up the diseased bees and combs in a large tank. Bee-inspectors, he said, are born, not made. It is an easy matter to learn to detect the disease and to effect a cure. Any man of ordinary intelligence can do this, but it is only a small part of bee-inspection. The difficult part lies in handling the bee-keeper, and, without antagonizing him, get him to comply with the law because he sees the advantage it brings him in so doing.

The practice of carrying an instrument with which to test the dead brood is not a good one. Such an instrument in the hands of an ordinary man is bound to spread infection. The best method is to carry a pocket full of wooden toothpicks, and after testing a diseased cell either push the toothpick into the comb to mark the spot or drop it down the mouth of the smoker and dispose of it. "I do not yet know of one single inspector," said Mr. Rankin, "who is in the work for the money he is getting out of it. They have the good of the industry at heart, to the

American Bee Journal

very last man. Some of them make mistakes, but they all deserve the hearty support of every bee-keeper and every journal. No one has a right to criticize them publicly. If he is incompetent the law provides for his removal from office, and this should be done; but to publish criticisms on the mistakes of an inspector is to harm the industry wilfully."

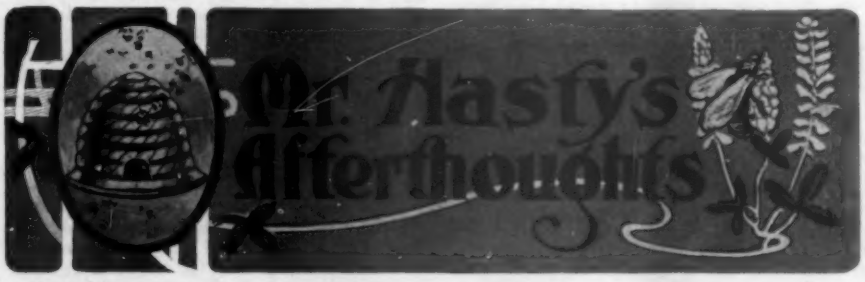
Mr. L. H. Scholl gave a talk on inspection in Texas and the methods employed. Shaking has not proven satisfactory, and the line they now work on is to sulphur the diseased colony at the entrance with a smoker, and then burn the infected combs.

Mr. J. Q. Smith, inspector for Illinois, described his method of treatment, which was briefly that of shaking once on starters of foundation, and being careful not to allow any robbing or dripping of honey. He stated that in nine out of every ten yards treated he had been successful.

Mr. George W. York, Editor of the American Bee Journal, then offered a motion that a telegram of thanks be sent to Dr. L. O. Howard, Chief of the Bureau of Entomology, as an expression of gratitude felt by the inspectors of the United States for the assistance of his Bureau in the investigation of bee-diseases. The motion was unanimously carried.

Dr. Phillips summed up the meeting in a few very interesting and instructive remarks. He stated that he thought it had been clearly demonstrated that no one treatment could be successful in all localities and under all circumstances. The treatment must be adapted to the locality and the surrounding conditions.

All who were privileged to attend the meeting felt that it was a day most profitably spent, and that such meetings should continue. Bee-inspection must become a science, and the contact of one inspector with another, comparing methods and conditions, cannot but broaden him and better fit him for one of the most important of all branches of apicultural work. R. M. J.



The "Old Reliable" as seen through New and Unreliable Glasses,
By E. E. HASTY, Sta. B. Rural, Toledo, Ohio.

PROVIDING EFFECTIVE DRONES.

Dr. Miller asks what I would *advise* as to providing drones and having them actually effective. I do not feel at all sure that I know what to advise. What's more, it isn't exactly fair to demand it of me at this stage of the game. I am privileged to say, "You are stabbing the button with your needle where there isn't any hole," without first getting positive knowledge as to whether it's more east, west, north or south that's needed to find the orifice. If I am told, "You couldn't sew the button on a bit better yourself," I can reply: "That's so, probably; and yet my original assertion is the truth."

This is my best at the present minute: Choose a few convenient colonies—no need that they be specially high quality ones—and have them for drone-homes. Keep their own drones exterminated as nearly as possible. Give them from time to time *very small* bits of drone-comb with larvæ in—these, of course, to be of best chosen parentage. I don't think giving just a few newly-emerged drones, or even giving just a few brood about to emerge, would be quite so good as this—yet it might for all that I *know*. It would be effective to have chosen drones flying first in spring or last in fall—only some colony you are not thinking of actually gets the first drones flying in the spring; and some strong colony you don't know is queenless is liable to have them last in the fall. Page 814.

LAYING ABILITY OF QUEENS.

Here's a sliding scale of voracity. A soldier, eating his rations and nothing else, eats his weight in about 64 days. A swine does much better. A farmer shuts up 10 shoats weighing 100 pounds each and feeds them corn three times a day—half a bushel of ears at a feed—or say 3 pounds of actual corn per shoat. Thus they eat their weight in less than 12 days. But a mouse, I find, makes nothing of eating one-third of its weight in one night. One of mine ate his companion in 3 days, and lots of other victuals besides. With cracker alone they might fall short of one-third their weight of it; but with apple or sweet potato with cracker they would succeed. Then there's our queen-bee. Food plus water *must be*, at least calculation, 20 percent heavier than her day's total weight of eggs. I'll guess they do not give a queen pure water enough to affect the figures much; but I fear we can not be sure of that. If eggs weigh 388 to the grain (I suspect them lighter), then a queen laying 2000 eggs a day lays a little over 5 grains—say twice her summer weight, or 2½ times her winter weight. We'll say it takes 6 grains of food to produce 5 grains of eggs. If so, she eats her winter weight in 8 hours. Mr. Carr's queen, mentioned on page 950, must have eaten her weight about every 4 hours. [Aside. No wonder queens (except when chilled) starve to death so quickly.]

Here's a way that occurs to me to get a founded *opinion* as to whether they give the queen much water or not. Weigh 100 fresh eggs. Then seek how many thoroughly dried eggs it takes to balance them. If only 120, or thereabouts, then the assumption above is correct. If it takes 200 or more, then they give her water largely.

MICE EATING HONEY AGAIN.

The mouse experiment mentioned on page 917, I repeated on the same mice, and also on different mice, with the same result. That's evidently sound—they don't want to have honey spread on their favorite viands. Next I gave a piece of comb honey to mice having plenty of various kinds of food and also water. Next morn there was an abrasion on one side which I now think was due to mouse-teeth. At the time I felt in doubt whether they did it, or whether it was there when I put it in. Certainly they didn't eat much of it. This honey was exposed to 2 mice for 3 nights. When taken out it was leaking quite a bit below, apparently from being jumped on at play. No considerable eating. And yet I several times saw them *notice* the honey—I being so far off that I couldn't tell whether they merely snuffed it or took a slight sip. From the next experiment I didn't get off quite so well—but the above will do for this time.

MOST MONEY MADE WITH BEES.

So $22,000 is the high-water mark of money accumulated at honey-production—and that long ago when prices were high. Record holder, Adam Grimm. Page 815.

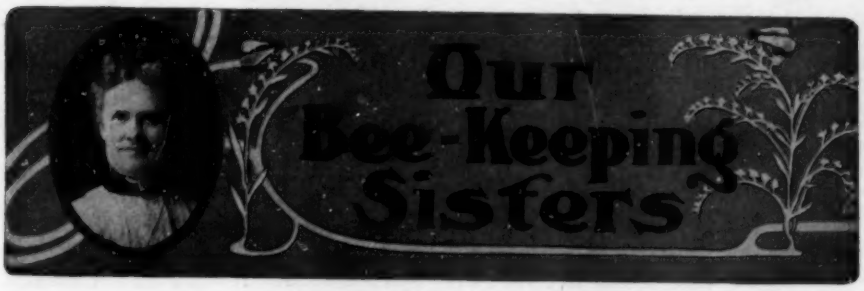
INTRODUCING QUEENS.

Dr. J. H. Heagy, page 816, evidently has "ideas and things" about queen-introduction. Brand-new cage with no bee-smell in it. Companions all newly-emerged bees from the colony about to receive the queen. These kinks can hardly be anything else than good, and may be quite important. His *washing* the queen with water held in a camel-hair brush is rather unique—hardly know what to think as to the utility of it. But we'll kindly play that it does lots of good in ridding her of accumulated odors. Humble her pride a little anyhow, and keep her from abusing the infantile bees she is put with. That her companions (on account of tender age) have nothing to feed her, seems to be a weak point.

CELLS FOR QUEEN-LARVÆ.

Curious. W. C. Gathright finds that cells raw and ragged from the knife are not nearly so acceptable, when larvæ are put in, as when first inserted 2 or 3 hours in a queenless colony. The result of this latter operation is polished and smooth surfaces; and a much larger proportion of the larvæ will be accepted. Page 816.

American Bee Journal



Conducted by EMMA M. WILSON, Marengo, Ill.

Bees in the Cellar

Our bees are all snug in the cellar. We put them in Nov. 19. It was a question what to do, as they had not had a flight for about 10 days. But the chances were that they might not have an opportunity to fly for some time, and certainly there has been no chance so far (Nov. 23), as the weather has been very bad all week. It commenced to rain and sleet just as the last bees were brought in, and we have had rain, sleet, and snow — everything in the way of weather but sunshine—ever since.

It gives one a comfortable feeling, when storms are howling without, to know that the bees are warm and sheltered within.

It is a sort of luck and chance game, this putting bees into the cellar. If it is warm and bright, so they can have a flight in a few days, then we are sorry they are put in; on the other hand, every day they stay out, if they are not to have a good flight, is a positive injury.

When the weather-man gets so he can tell us for weeks in advance what kind of weather to expect, won't it be a blessing for bee-keepers?

Bee-Keeping in California

Without saying where it found it, The Rural Californian copies a very interesting article written by Elizabeth Andrews, who says:

WHERE BEE-KEEPING IS AN INDEPENDENT INDUSTRY.

Looking down toward the ocean and up the valley you can see over 30 towns and cities, including Riverside, San Bernardino, Redlands, Pomona, Los Angeles, Pasadena and Chino, with its hundreds of acres of sugar-beets and the Chino sugar factory.

On this little plateau, some 9 years ago, my father built a little home. He bought a few bees and located in this then barren spot. We had come from Ashland in Southern Oregon, among the beautiful Sisque mountains, and I must say that at first it all seemed bleak and dry and lonesome to us. But we planted out an orchard of apricot, apple and prune trees, and kept them watered from a little spring in the mountain-side, which was first run into a reservoir. The place soon took on a green look. It seemed more cheery and homelike, and we grew to love the pure air and deep gorges and barren mountains.

As time went on my father increased the number of colonies of bees, and in the spring of the first year we began to extract honey. This, at first, was very amusing to us, and we were all eager to help in any way. I generally got the chance to turn the crank to the extractor. It was interesting to see the men bring in the large frames of honey, and after cutting off the caps from the honey-cells with a sharp knife, put them in the wire-holders in the extractor and turn the crank. The rich honey would fly out of the cells and run down the sides of the tank. When the honey was all out of the frames they would take them back to the hives, and the busy little bees would soon be hard at work refilling them. When the honey season is on they often have them full again in a few days.

The bees gather most of their honey from the wild black and white sages, sumac, goldenrod and sunflowers. In a wet season these flowers grow in profusion on the hills and along the river banks. In the valleys the orange and alfalfa blossoms are full of fine white honey, and in their season are a splendid bee-pasture. After our first year's experience we decided to separate the bees and put part of them down in the valley where they could pasture on these lowland blossoms. We found it a very profitable plan to move them from place to place as the blossoms warranted, as there is little or no honey in the mountains after the summer heat is on, and it is then that the alfalfa is at its best. When we move the bees we wait until they are all in at night. Then we go about and tack little screens over the entrance of each hive. Then we put them on the wagons and haul them wherever we want to leave them. They are unloaded and left with the screens on until they get used to their locality, generally about 2 days.

During the honey-flow, which begins about the first of April and lasts until about the first of September, it keeps about 3 men busy taking care of 600 colonies. The rest of the year one man can do all that is necessary, and he has only to see that the bees have enough to last them through the winter and are in good condition to begin work again in the spring. Some years they have to be fed a little during the winter, but this is only after an extremely dry season. When it is necessary to feed them we sometimes use honey that is not marketable, or a coarse sugar dissolved in water.

In a good season 600 colonies will produce about 30 tons of honey. This is generally readily sold on the market from 4½ to 6 cents per pound, according to the market and the grade of the honey. Comb honey is generally sold at about twice what the extracted brings, or from 9 to 12 cents, but as the combs have to be built each time, and the removed sections replaced, it makes it no more profitable, and as the comb honey is used for table use only, it is not quite so readily sold.

In swarming seasons we put empty hives about near the apiary, and a great many swarms enter these instead of going away to the hills. In this way we get a good many without any one being there to look after them. When we find a swarm on a tree we cut the limb and shake them into a hive. They are generally very quiet, and we often hive them without wearing a veil.

In many places in the mountains the bees are in caves in the rocks. During the first years of our experience we dug out many of these caves, sometimes hiving the bees and sometimes killing them, but invariably getting a large quantity of honey and wax. This wax is sent to the factory to be made into comb foundation, or sold on the market. It always commands a good price. From these wild bees a great many people have gotten their start, but the dry seasons and wild animals have destroyed them until there are but few left in the mountains of Southern California.

In the past 9 years we have increased our first start of about 60 colonies to over 600, besides what we have lost. It is a business that can be run successfully by some one who has other work in the winter months, and withal it is a very interesting and educational occupation. With a little study one can learn to handle them so that they do not get irritated and so get but a few stings. After working with them for a time the stings are not nearly so painful, and swell but very little. They seem to get used to people, too, as we go back and forth through the apiary when going to the spring or pasture.

The bee-business can be started with little money, and if a man is at all enterprising he can soon increase it. As the work among the bees is light a great many women in Southern California do as we have done, and help a great deal in the management of them. We get an abundance of fresh mountain air and recreation from this outdoor life, and find it a very pleasant diversion from our household duties. ELIZABETH ANDREWS.

Corona, Calif.

Bees and Poultry

Quite a controversy has taken place in Gleanings regarding the relative merits of bee-keeping and poultry-keeping. Referring to this, there appears in that paper the following communication from one of the sisters:

POULTRY VS. BEES AGAIN—BEES LIKED BETTER.

Since you have published so many articles on poultry vs. bees, I feel like adding my experience to that already given. I can not unite fully with Mr. McGlade, neither can I see the rosy side of chicken-raising with Mr. Pearson. I was born on a farm, and I began to help with the chickens at a very early age. Later I took sole charge of the poultry business at our home. I had a good incubator and brooders; also good thoroughbred stock—part of the time Light Brahmas, and afterward the White Wyandottes. I was fairly successful in hatching the chicks, and I think I usually raised 95 per cent of those hatched. My hens laid well, and we had a good market for broilers. I loved my chickens, and I cared for them faithfully. They paid expenses and something more, but I am not sure that I was paid for my labor.

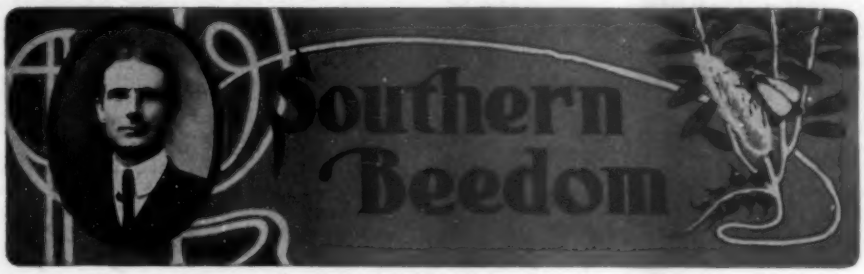
When Mr. McGlade said he worked hard enough to build 17 miles of railroad, and spent all his money on feed, oyster-shells, lice exterminators, etc., I laughed, and said he was very nearly right.

Now, my experience with bees has been of very short duration, so that I feel I know nothing about the financial side of the business; but this much I can say—that, whereas you have to work hard over your bees for 6 months, you must attend to your chickens *every day* in the year; and the more inclement the weather just so much more attention your chickens require. The work for bees is clean and pleasant. Perhaps I need not say how I regard the work for chickens.

In conclusion, I must say that I keep *both* bees and chickens, and I expect to continue to do so, as I am very fond of the products of each. But if I should choose only the work that is agreeable to me, I would take bees, every time, and I believe I can make them pay quite as well as chickens, if not better. SUSAN E. WILLIAMS.

Moorestown, N. J., March 26.

American Bee Journal



Conducted by LOUIS H. SCHOLL, New Braunsfels, Tex.

Bee-Keepers' Exhibit at the San Antonio International Fair

There was a very creditable exhibit of apiarian products and bees, although the season was not a very favorable one for Texas honey-producers. The different races were well represented. There was, however, very little light honey on exhibition, and a lack of comb honey, due to the short crop and the great demand for honey that prevailed throughout the entire season, hence the honey was sold long before the Fair. The prizes awarded are as follows:

For the best and largest industrial exhibit, Udo Toepperwein received a Gold Medal. This exhibit consisted of all kinds of bee-keepers' supplies and appliances, apiarian products, bees and queens, and products made from honey and wax.

Best display of special designs of comb honey—H. W. Toepperwein, 1st, $5; 2d, $3.

Best 12 pounds of white bulk comb honey in friction-top pails—Wm. Cravens, 1st, $3; 2d, $2.

Best 6 pounds of white bulk comb honey in friction-top pails—Wm. Cravens, 1st, $3; 2d, $2.

Best 3 pounds of white bulk comb honey in friction-top pails—Wm. Cravens—1st, $3; 2d, $2.

Best display of bulk comb honey—Wm. Cravens, 1st, $5; 2d, $3.

Best dozen jars of white extracted honey—Wm. Cravens, 1st, $3; 2d, $2.

Best dozen jars of light amber extracted honey—Wm. Cravens, 1st, $3; 2d, $2.

Best display of extracted honey—Wm. Cravens, 1st, $5; J. W. Griffin, 2d, $3.

Best display of extracted honey in granulated form—Wm. Cravens, 1st, $3; 2d, $2.

Best sample cake of bright yellow beeswax, not less than 2 pounds—Anton Fourpier, 1st, $5; Wm. Cravens, 2d, $3.

Best and largest display of beeswax—Wm. Cravens, 1st, $5; Moritz Rompel, 2d, $3.

Best display of special designs in beeswax—Wm. Cravens, 1st, $5; Moritz Rompel, 2d, $3.

Best display of fruit preserved in honey—Wm. Cravens, 1st, $5; 2d, $3.

Best honey-vinegar—Wm. Cravens, 1st, $3; Daniel Wurth, 2d, $2.

Golden Italian bees and queen in single-comb observatory hives—Daniel Wurth, 1st, $5; Bee and Honey Co., 2d, $3.

Three-banded Italian bees and queen—Bee and Honey Co., 1st, $5; Daniel Wurth, 2d, $3.

Carniolan bees and queen—Bee and Honey Co., 1st, $5; Grant Anderson, 2d, $3.

Caucasian bees and queen—Bee and Honey Co., 1st, $5; Daniel Wurth, 2d, $3.

Cyprian bees and queen—Bee and Honey Co., 1st, $5; Daniel Wurth, 2d, $3.

Holy Land bees and queen—Bee and Honey Co., 1st, $5; Daniel Wurth, 2d, $3.

Black bees and queen—Daniel Wurth, 1st, $5; Wm. Cravens, 2d, $3.

Best display of bumble-bees—Wm. Cravens, 1st, $5; 2d, $3.

Best display of ground bees—Wm. Cravens, 1st, $5; 2d, $3.

Best and largest display of various races of bees in observatory hives—Daniel Wurth, 1st, $10; Bee and Honey Co., 2d, $6.

Best and largest display of queens of various races, in mailing cages—Daniel Wurth, 1st, $5; Wm. Cravens, 2d, $3.

Best case of white section honey—Wm. Cravens, 1st, $5; 2d, $3.

Best case of light amber section honey—Wm. Cravens, 1st, $5; 2d, $3.

Best and largest display of section comb honey—Wm. Cravens, 1st, $5; 2d, $3.

Best instructive display of apiarian products and the various uses made of honey and beeswax—Wm. Cravens, 1st, $20; 2d, $10.

Largest and best display of bee-keepers' supplies—Udo Toepperwein, Diploma.

Does Corn Yield Honey?

This much-disputed question has been asked me several times of late, and what my opinion is in regard to the matter. The same question is asked about sugar-cane or sorghum.

It is supposed that most plants yielding pollen also yield *some* honey, however small in quantity. The general belief is that sorghum yields some honey, but there is much doubt as to whether the corn-tassels yield any honey at all, although giving much pollen. This question has quite frequently bobbed up at conventions, but no absolute or satisfactory proof has ever been given.

H. H. Hyde, at the 1900 annual meeting of the Texas Bee-Keepers' Association, cited a case whereby he thought he had proven, to his own satisfaction at least, that corn yielded honey, and sometimes in large quantities, as some of his bees had stored surplus honey from this source. It was during a dry summer, when nothing else was in bloom for the bees to work on, that a late field of corn near one of his apiaries came into bloom. The bees worked vigorously on the tassels, and Mr. Hyde claims that they did not only get pollen in large quantities, but also honey in abundance, and stored it in supers. Mr. Hyde was very positive that this was the only source from which the honey came, as there was absolutely no other bloom anywhere—to the best of his knowledge—from which the bees might have gathered the honey, except from the corn-tassels.

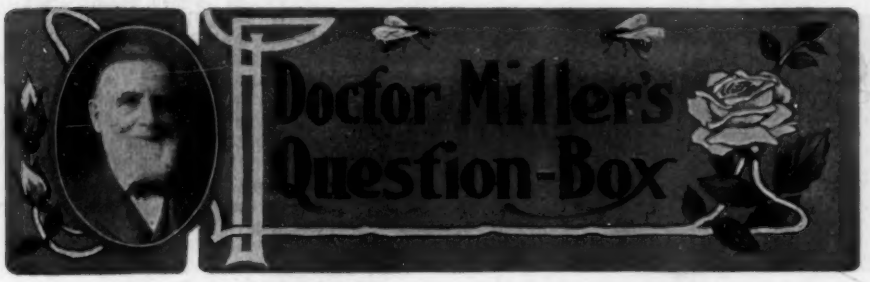
There is room for investigation, and by this an old, much-disputed question might be solved. Mr. L. B. Smith, of Rescue, Tex., referring to this same subject in the Dallas News (Tex.), has this to say regarding his observations:

It is claimed by some of our able writers on apiculture that sorghum cane, milo maize, corn-tassel and the various oaks are all honey-producers. With no desire to provoke controversy, I will say this is not in accordance with my observations, and I have been a close observer of such things from early childhood. I have examined the honey-sacs of hundreds of bees when working on the bloom of the above-named plants, but have never been able to discover that they were getting any honey. By taking a little pains any one can easily tell when bees are getting honey from any bloom. Find a bee that is working on the bloom that you are in doubt about, catch it by both wings so that it can't sting you, as we do in caging to send off by mail with queens. Now place the bee on a clean, smooth surface, say a newly painted hive-cover, or a sheet of note-paper will do. Now gently press on the abdomen of the bee with one finger of the other hand, and if it has any honey whatever in its honey-sac it can be made to disgorge it without hurting the bee in any way.

I have examined hundreds of bees in this way while working on cane-heads, corn-tassel, maize-heads, etc., and could never make one disgorge a particle of honey. So I conclude they get nothing but pollen from them.

We would be glad to hear from any other bee-keepers who have made observations on this question.

American Bee Journal



Send Questions either to the office of the American Bee Journal, or to
DR. C. C. MILLER, Marengo, Ill.
☞ Dr. Miller does *not* answer Questions by mail.

Leaving Empty Supers in Hives in Winter

This has been a very poor season for bees. I have about 14 colonies, and but one that has stored any surplus, and that one is an Italian colony. I have always taken off the supers in the fall, and have put on empty supers filled with old rags, etc., but as there is no honey in the supers, will it not do to leave the supers on? Will the bees winter just as well? MISSOURI.

ANSWER.—It will take quite a bit of the heat of the bees to keep warm the empty space in the super over them, and as far north as you are, there will be no heat to spare. Besides, if the super is a section-super, the sections would be spoiled to leave them on over winter.

New Pure Food Laws and Bee-Keepers

Referring to the new pure food law, as given in Gleanings, what is to prevent a dishonest dealer from buying honey, mixing glucose with it and selling on the guarantee of the bee-keeper of whom he bought it? Or rather, what protection has the bee-keeper, or what assurance has he that such will not be done? To illustrate:

A is an honest bee-keeper. He sells 1,000 pounds of extracted honey to B (a dishonest dealer), in 60-pound cans, giving B a written guarantee that it is pure honey. B unscrews the tops of the cans, empties out the honey, mixes 1,000 pounds of glucose with it, puts it back in the 60-pound cans and proceeds to sell it to C, D, E, etc., on down to Z, giving each a guarantee that it is pure honey. Z discovers it is adulterated and goes back on B, who falls back on his guarantee from A. How is A to prove his innocence?

It may be that I am unduly alarmed, but I really am afraid some poor bee-keeper who is not able to stand a long-drawn-out lawsuit is going to have trouble, and I think it well for this matter to be discussed in the papers, and, if necessary, some means devised by which the cans may be sealed in such a manner that the honey cannot be removed without breaking the seal. It would be well for bee-keepers to be fully prepared to protect themselves by the time they harvest another crop. TEXAS.

ANSWER.—Your question is a timely one, and yet it was evidently not left altogether out of view by the editor of Gleanings. As he says in substance, if A sells a package of honey that is adulterated he is safe from punishment if he can fall back upon B, from whom he bought it with B's guarantee of purity, and B can in like manner fall back upon C, the producer. But note that he adds, "As I understand it, this guarantee will not apply in any case where the original package in which the goods were received has been broken and the goods have been put into other packages." Then comes into play your suggestion that the producer must seal the package in such a way that it will be easy to prove if the seal has been broken.

Disturbing Bees in the Cellar

I began keeping bees a year ago last spring. I put 9 colonies into winter quarters Nov. 10. They were all in good shape except 2 colonies, which had foul brood, and I did not know it till quite late in the season. I changed their frames twice, giving them one-inch starters first and full sheets of foundation the last time, so they hadn't time to get enough honey for their needs. I fed syrup vigorously till it got so cold that they could not take any more. They seem to have quite a little supply, but I am a little "scary" about it. They are my best colonies. Last winter I had some colonies that were short. They had a little along the top-bars of every frame. So I used to go and look at them about once in 2 weeks and move the outside frames towards the center, for they did not seem to get to them if I did not do so. I brought them through all right. Do you think it pays to bother them in the cellar, or would they get along better if let entirely alone?

I am trying to winter a small nucleus whose queen died along in the summer. Before I noticed it they were almost nothing, so I felt sorry for the little things and got a queen for them, put them in a nucleus hive, and fed them, and soon the queen got to laying and had quite a little brood by the end of the harvest. I made a feeder of my own design to go on the outside of the hive about half-way up to the rear end of the hive. As far as I can see, they are all right. I filled the feeder full of thick syrup before I put them away for winter. MINNESOTA.

ANSWER.—Disturbing the bees once in 2 weeks throughout the winter is certainly no benefit; but as they came through all right in your case, it could not have done so very much harm. The probability, however, is that in the cellar the bees would have reached the stores without any interference on your part. If the cellar is of the right temperature, never much below 45 degrees for many days at a time, I think I would risk letting them hunt the stores for themselves, so long as plenty of stores were in the hive.

Moving Bees a Short Distance—Correct Amount of Winter Stores

1. I would like to change my bee-hive places, but leave them on the same piece of ground. What time of year is the best for this work, so that the bees won't mix?

2. What direction should I turn the hive-entrance, or does it matter what direction this far south?

3. All my bees had from 20 to 25 pounds of stores per colony, November 10. Do you think it is enough for the winter? MISSOURI.

ANSWERS.—1. The best time is when they have been confined to the hives the longest, so that their first flight after their long confinement will be from their new location. If you could tell just when their last flight would be before their longest winter imprisonment and their first flight after it, the ideal time to move them would be on the evening of the day of their last flight, or in the morning before their first spring flight.

2. Small matter which way they face, although there is a somewhat general preference for having them face south and southeast.

3. Being in latitude 38 or 39, you undoubtedly winter bees outdoors, and very likely the weather will allow your bees greater activity than in localities farther north, resulting in greater consumption of stores. Some colonies may pull through with 20 pounds of honey, and others may starve with 25. It would certainly be safer to have them heavier.

Size of Winter Hive-Entrance—Winter Loss of Queens

I notice that there is a great difference in ideas among amateur bee-keepers about the size of entrance for winter, but I believe nearly all agree on 2 square inches capacity. It is all right if given in the right place, or rather at each corner, but if it is given all in the center, and the cluster of bees is in the center, through a long cold snap it gets clogged with dead bees. Then if there comes

American Bee Journal

a warmer time, but not warm enough for bees to fly, water sometimes runs from the entrance and freezes as it comes in contact with the outside air. Now, as the dead bees help to hold the water they are frozen up air-tight, and if another cold spell comes on that colony is doomed even with plenty of honey. Many times I have found the entrance on one side frozen solid with ice, but the other side clear and free. So don't pin your faith on a single entrance, except it is the full width of the hive.

Another thing I would like to hear about is, How many bee-keepers have lost queens in winter that can account for it? A hen found her way into one of my bee-houses last January and laid in a super that had been left there. The colony under and on each side lost their queens; came out queenless in the spring. Two queens were reared the year before. I lost no other queens in the bee-houses. Forty-five others came through all right. I shall see that my bees are not disturbed in very cold weather this winter.

Marceline, Mo., Nov. 5 IRVING LONG.

Secured More Honey Than Others

I have been too busy to give proper care to my bees, but I secured more honey than any one else in this neighborhood the past season. My best colony produced 56 sections of honey and 5 extracting supers full to overflowing.

LEWIS LAMKIN.

Sioux City, Iowa, Nov. 7.

Home-Reared Queens, Etc.

I have reared several queens this year, but not by the Doolittle plan, and have found by careful breeding that queens reared by this plan are as good as anybody needs. I have received several queens from different States by mail, and find that they don't do any better than those reared right at home; but if one is rearing queens he has to get a breeder or common stock from some other State in order to get different blood, care being taken that all drone-larvæ are destroyed. With an uncapping knife shave their heads off, or use entrance-guards to be sure that none get out. Now, when all are destroyed, and when certain that nothing but the best drones are at large, have the virgins in nuclei, and you will find that queens mated in this way are as good as those received through the mail, if not better, as most of the queens received by mail are somewhat injured by throwing the mail-sacks on and off the cars. I received one by mail that would lay from 3 to 10 eggs in one cell for nearly a week, after which she would begin to lay only one in each cell, and turned out to be a good layer at last; but the eggs that were laid the first week were quite a loss, just when I wanted the bees most.

My bees have done fairly well this season. Some of the strongest have stored 150 pounds of extracted honey, but have not stored much section honey. They would sooner work in a hive-body with starters than to enter a super.

I had 20 colonies last spring, increased to 35, and got 1000 pounds of extracted and about 150 pounds of comb. The fall crop was very good, so they had plenty of stores below for winter Some of them have stored 40 pounds of fall honey above, which I extracted.

I sell all my honey right at home at 8 cents for extracted, and 10 to 15 cents for comb, according to color and weight.

B. F. SCHMIDT.

North Buena Vista, Iowa, Nov. 12.

American Bee Journal

CONVENTION NOTICE.

New York.—A series of Bee-Keepers' Institutes will be held in New York State as follows: Amsterdam, Dec. 10; Syracuse, Dec. 11; Fulton, Dec. 12; Gouverneur, Dec. 13, 14; Auburn, Dec. 15; Romulus, Dec. 17; Geneva, Dec. 18, 19—State Convention. Mr. Chas. Stewart, of Sammonsville, N. Y., has been engaged as Institute Speaker. Mr. Stewart is one of the State Bee-Inspectors, and has shown a great interest in the welfare of the bee-keepers of the State.

Romulus, N. Y. C. B. HOWARD, Sec.

American Bee Journal

Honey and Beeswax

CHICAGO, Nov. 7.—The market is taking honey, both comb and extracted, in a very satisfactory way. The price of No. 1 to fancy comb is 15@16c; off grades, 1@2c per pound less. White extracted, 7½@8c; amber, 7c; dark, 6@6½c. All of this is governed by quality, condition, and package. Beeswax, 30c per pound.
R. A. BURNETT & Co.

KANSAS CITY, Nov. 8.—The demand for both comb and extracted honey is good, receipts light. We quote fancy white comb, 24 sections, at $3 25; No. 1, $3; No. 1 white and amber, $2.75. Extracted, white, per pound, 7c; amber, 6@6½c. Beeswax, per pound, 25c.
C. C. CLEMONS & Co.

CINCINNATI, Oct. 20.—The demand for comb honey is good. No. 1, white, brings 14½c wholesale, and 16c retail, by the case. Off grades less from 2@3c per pound. White clover extracted brings in barrels, 8c per pound; in cans, 8½c; amber grades, light, 6c in barrels; dark, 5½c in barrels; in cans, ½c per pound more. Beeswax, 30c. C. H. W. WEBER.

PHILADELPHIA, Nov. 8.—While the supply of comb honey is equal to the demand, large quantities of comb honey having arrived in the market in the last few days, the price still remains high. The outlook, however, is that when the season advances and the bee-keepers ship more of their crop to the market, the prices will be a little weaker. We quote: Fancy white comb honey, 16@18c; No. 1, 14@15c; amber, 11@13c. Fancy white extracted, 7½@8½c; light amber, 6½@7c.
We are producers of honey and do not handle on commission. WM. A. SELSER.

NEW YORK, Nov. 19.—We are having a good demand for white comb honey of particularly fancy stock, and same finds ready sale at 15c, and 13@14c for No. 1 white. Receipts up to date have been quite numerous, but we expect that from now on they will be lighter, as the bulk of the comb honey, we believe, has been marketed. No. 2 white, amber and buckwheat are in fair demand, with sufficient supplies to meet same. We quote at from 10@12c, according to quality. Extracted honey is in good demand, principally California stock, and strictly white sage is now selling at 7½@8c; light amber at 7c, and amber at 6½c. Extracted near-by, New York State amber and buckwheat, at 6@6½c, with a fair demand. Southern is in good demand at 55@65c per gallon, according to quality, for good average stock; 75c for fancy. Beeswax, 30c.
HILDRETH & SEGELKEN

DENVER, Oct. 20.—All desirable lots of white comb honey in double-tier cases have now been shipped out of this State, leaving only a few cars of single-tier cases. The quality of this year's crop was fine, better than for several seasons. We quote our local market as follows: Strictly No. 1 white, per case of 24 sections, $3; ordinary No. 1 and off grade, $2.50 to $2.75. Extracted, white, 6½@7½c. Beeswax, 24c for average yellow delivered here.
THE COLO. HONEY-PRODUCERS' ASSN.

CINCINNATI, Nov. 3.—The honey market is rather quiet at this date, owing to the market being flooded with comb honey; selling slowly at from 14@16c. Extracted amber honey sells at 5½@6½c. White and fancy grades find sale at from 7½@8½c. There is not so much moving as one might be led to believe. Beeswax is dragging at 29@30c for choice yellow.
THE FRED W. MUTH CO.

INDIANAPOLIS, Nov. 15.—Fancy white comb brings 16@17c readily; No. 1, white, 2c less per pound; the demand is not supplied, but higher prices would decrease the demand. Best grades of extracted honey bring 8@9c. Good average beeswax sells here at $33 per 100 pounds.
WALTER S. POUDER.

TOLEDO, Oct. 19.—The market on comb honey remains about the same as last quotations, but has been coming in much more freely, as bee-keepers seem to be very anxious to get rid of their stock. Fancy brings in a retail way 16c; extra fancy, 17c; No. 1, 15c; buckwheat, 15c. Extracted white clover in barrels brings 7@7½c; cans the same. Beeswax, 26@28c.
THE GRIGGS BROS. & NICHOLS CO.